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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/571,404

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Luigi Resconi

FE 6129 (US)

6658

34872

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06/12/2009

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EXAMINER

BOYLE, ROBERT C

ART UNIT

PAPER NUMBER

1796

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/571,404	<b>Applicant(s)</b> RESONI ET AL.	
	<b>Examiner</b> ROBERT C. BOYLE	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-23 and 26-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-23 and 26-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The Double Patenting rejections presented in the previous Office Action mailed December 9, 2008, paragraphs 1-9, still stand. Applicant has requested the Double Patenting rejections be held in abeyance until an application is issued as a patent (see Applicant Remarks filed April 6, 2009, page 11).
3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on April 6, 2009. In particular, claims 18 and 35 have been amended to include the limitation that at least one T is a moiety of formula (IIIa). In addition, limitations in a list presented in the alternative have been removed so that R10 is now limited to a linear or branched, saturated or unsaturated C1-C20 alkyl group. Finally, claims 36-39 have been added. The amendment to claims 18 and 35 changes the scope of the claims in a manner not previously examined. Thus, the following action is properly made FINAL.

### ***Double Patenting***

4. Claims 18-21, 23, 24, 26, 27, and 31-34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 39-51 of copending Application No. 10/571,382. The rejection is adequately set forth in

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paragraphs 2-9 on pages 2-4 in the office action mailed on December 9, 2008 and is incorporated here by reference.

5. Claims 18-21, 23, 24, 27, and 31-34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 41-45, 47, 48, and 52-55 of copending Application No. 10/571,389. The rejection is adequately set forth in paragraphs 2-9 on pages 2-4 in the office action mailed on December 9, 2008 and is incorporated here by reference.

6. Claims 18-21, 23-27, 31-34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 23-37 and 41-44 of copending Application No. 10/571,403. The rejection is adequately set forth in paragraphs 2-9 on pages 2-4 in the office action mailed on December 9, 2008 and is incorporated here by reference.

### ***Claim Rejections - 35 USC § 112***

7. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 18, 35 and 36 recite "polymerizing a polypropylene resin". It is unclear whether this step involves polymerizing the monomers of propylene to yield a polypropylene resin or whether the step involves polymerizing polymers of propylene

(ie: polypropylene) that are in resin form to yield a different product, such as a crosslinked structure. Therefore, scope of the claim is unclear.

***Claim Rejections - 35 USC § 103***

9. Claims 18-23, 26-27 and 31-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schottek et al., (WO 01/48034). As the cited WO patent is in a non-English language, the English equivalent, US 2003/0149199 (hereafter "Schottek") has been utilized in place of WO '034. All column and line number citations are made with respect to the above-mentioned US document.

10. As to claims 18, 26 and 36, Schottek teaches a multistage process involving the polymerization of olefins, including propylene and ethylene in a gas phase with organically supported catalytic systems of metallocenes and alumoxanes (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0121). Schottek teaches the metallocene has a chelating ligand with an indenyl derivative and a cyclopentadienyl derivative bridged by a  $\text{SiMe}_2$  group and the cyclopentadienyl derivative is a five membered ring that is fused with a C4-C24 heteroatom aryl ring system such as thiapentalene and has a  $\text{R}^{20}$  aryl group on the ring (paragraphs 0110-121). Schottek does not expressly recite that  $\text{R}^{20}$  can be an alkyl group or that another alkyl group can be substituted in addition to  $\text{R}^{20}$ .

11. However, it would have been obvious that an alkyl substituent could be substituted on the thiapentalene ring in addition to the  $\text{R}^{20}$  aryl group because formula (II) teaches that  $\text{R}^{50}$  can be a C1-C18 alkyl group, such as methyl, ethyl, and butyl

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(paragraph 0114), and it would have been obvious that a substituent off a six membered ring of the indenyl ring system could also be off the Q ring system in addition to the R<sup>20</sup> group because formula (I) teaches alkyl substituents off both ring systems (paragraphs 0014-20). It would have been obvious to add such substituents to the Q ring system in order to control the isomerization of the metallocene (paragraphs 0133-135) to allow greater stereospecificity during polymerization.

12. As to claims 19-20, Schottek teaches the use of an organo aluminum compound as part of the catalyst system (paragraphs 0152-153).

13. As to claim 21, Schottek teaches the metal is Ti, Zr or Hf, X is a halogen, and the bridging group is SiMe<sub>2</sub> (paragraphs 0110-121).

14. As to claim 22, Schotteck teaches the R groups corresponding to claimed R<sup>1</sup> and R<sup>2</sup> are different from each other and include isopropyl and ethyl groups (paragraphs 0110-121).

15. As to claim 23, Schottek teaches using the t-butylphenyl group (paragraphs 0110-121).

16. As to claim 27, Schottek teaches R<sup>50</sup> can each be hydrogen (paragraphs 0110-121).

17. As to claim 31, Schottek teaches propylene copolymers of 50-100 wt% propylene and a propylene-ethylene copolymer which has an ethylene content of 15-80 wt% which may have other alpha olefins (paragraphs 0211-0212).

18. As to claim 32, Schottek teaches using non-conjugated dienes in copolymerization of ethylene where the comonomer is up to 15 wt% (paragraphs 0203, 0211-212).

19. As to claim 33, Schottek teaches homopolymers of propylene (paragraph 0211).

20. As to claim 34, Schottek teaches polymerization of propylene and butane (paragraph 0212).

21. As to claim 35, Schottek teaches a polypropylene composition where the propylene copolymer is 50-100 wt% propylene and has ethylene content from 15-80 wt% (paragraphs 0211-0212) and made according to the method of claim 1 (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0110-0121).

22. Claim 35 states properties of the polypropylene composition: isotactic pentads higher than 90% and a flowability index equal to or greater than 2. While Schottek does not elaborate on the property, Schottek teaches essentially the same polypropylene composition and process as that of the claimed, and one of ordinary skill in the art would have a reasonable basis to believe the polypropylene composition of Schottek exhibits essentially the same properties. Since the PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobvious difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

23. Even if properties of the polypropylene composition of the instant claims and the prior art examples are not the same, it would still have been obvious to one of ordinary skill in the art to make a polypropylene composition having the claimed properties because it appears that the references generically embrace the claimed polypropylene

composition and one of ordinary skill in the art would have expected all embodiments of the reference to work. Applicants have not demonstrated that the differences, if any, between the claimed polypropylene composition and the prior art give rise to unexpected results.

24. As to claims 37-39, Schottek teaches that R<sup>50</sup> can be methyl or ethyl groups.

25. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schottek in view of Spitz et al., (US 6,057,258). The discussion with respect to Schottek as set forth in paragraphs 9-24 above is incorporated here by reference.

26. As to claim 28, Schottek teaches a multistage process involving the polymerization of olefins, including propylene and ethylene in a gas phase with organically supported catalytic systems of metallocenes and alumoxanes (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0121). Schottek teaches the metallocene has a chelating ligand with an indenyl derivative and a cyclopentadienyl derivative bridged by a SiMe<sub>2</sub> group and the cyclopentadienyl derivative is a five membered ring that is fused with a C4-C24 heteroatom aryl ring system such as thiapentalene and has a R<sup>20</sup> aryl group on the ring (paragraphs 0110-121). Schottek does not teach a pore diameter up to 10 micrometers and a porosity higher than 0.1 cc/g.

27. Spitz teaches organic supports for metallocene catalysts used in the polymerization of olefins with pore diameters of 75-300 Angstroms and a porosity from 1 to 4 cc/g (abstract; column 2, lines 15-24). It would have been obvious to one of



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ordinary skill in the art at the time the invention was made to modify the polymerization process in Schottek with the pore sizes and porosity taught in Spitz because Spitz teaches polymerization of propylene and ethylene with metallocene/aluminoxane with a support that gives high activity and leads to polymers with high molecular mass and low polydispersity (column 1, lines 10-27, 38-47; column 2, lines 15-24; column 8, lines 14-25).

28. As to claim 29, Spitz teaches polymer supports with pore diameters of 75-300 Angstroms (column 2, lines 15-24).

29. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schottek and Spitz in view of Costa et al., U.S. Patent Application Publication 2001/0014727. The discussion with respect to Schottek as set forth in paragraphs 9-28 above is incorporated here by reference.

30. As to claim 30, Schottek teaches a multistage process involving the polymerization of olefins, including propylene and ethylene in a gas phase with organically supported catalytic systems of metallocenes and alumoxanes (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0121). Schottek teaches the metallocene has a chelating ligand with an indenyl derivative and a cyclopentadienyl derivative bridged by a  $\text{SiMe}_2$  group and the cyclopentadienyl derivative is a five membered ring that is fused with a C4-C24 heteroatom aryl ring system such as thiapentalene and has a  $\text{R}^{20}$  aryl group on the ring (paragraphs 0110-121). Schottek

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does not teach pores with a diameter between 0.1 micrometers (1,000 Angstroms) and 2 micrometers (20,000 Angstroms).

31. Costa teaches a catalyst support for the polymerization of olefins with a pore radius between 1,000 and 75,000 Angstroms (abstract; paragraph 0012). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the polymerization process in Schottek with the pore sizes taught in Costa because Costa teaches catalyst support systems for the polymerization of alpha olefins with titanium catalysts where the supports are able to have variable sized particles which allows for obtaining polymers with low inorganic compound content (Costa: abstract; paragraphs 0011, 0015, 0085).

32. The range taught by Costa overlaps with the range disclosed in claim 30. It is well settled that where prior art describes the components of a claimed compound or compositions overlapping the claimed concentrations a prima facie case of obviousness is established. See MPEP 2144.05; *In re Harris*, 409, F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 3d 1379, 1382 (Fed. Cir 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

33. Even if Schottek does not teach an alkyl group on the thiopentalene ring system as discussed above (paragraphs 10-11), the claimed invention would still be obvious in view of the following rejection.

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34. Claims 18-23, 26-27 and 31-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schottek in view of Ewen et al., *Chiral Ansa Metallocenes with Cp Ring-Fused to Thiophenes and Pyrroles: Synthesis, Crystal Structures, and Isotactic Polypropylene Catalysts*, J. Am. Chem. Soc. 2001, 123, 4763-4773.

35. As to claims 18, 26 and 36, Schottek teaches a multistage process involving the polymerization of olefins, including propylene and ethylene in a gas phase with organically supported catalytic systems of metallocenes and alumoxanes (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0121). Schottek teaches the metallocene has a chelating ligand with an indenyl derivative and a cyclopentadienyl derivative bridged by a SiMe<sub>2</sub> group and the cyclopentadienyl derivative is a five membered ring that is fused with a C<sub>4</sub>-C<sub>24</sub> heteroatom aryl ring system such as thiapentalene and has a R<sup>20</sup> aryl group on the ring (paragraphs 0110-121). Schottek does not teach that R<sup>20</sup> can be an alkyl group or that another alkyl group can be substituted in addition to R<sup>20</sup>.

36. Ewen teaches metallocenes having cyclopentenyl ligands fused to substituted thiophenes where the metallocenes are used for producing polypropylene where the thiophene is substituted with both an aryl group and a methyl group (abstract, chart 1). It would have been obvious to use the ligands taught by Ewen with the metallocenes of Schottek because both teach metallocenes for polymerization of polypropylene and Ewen teaches catalysts with an alkyl group can tailor the polypropylene microstructure to give better stereospecificity (pate 4764, second column, last paragraph; page 4767, second column, last paragraph; page 4768, first two paragraphs).

37. As to claims 19-20, Schottek teaches the use of an organo aluminum compound as part of the catalyst system (paragraphs 0152-153).

38. As to claim 21, Schottek teaches the metal is Ti, Zr or Hf, X is a halogen, and the bridging group is SiMe<sub>2</sub> (paragraphs 0110-121).

39. As to claim 22, Schottek teaches the R groups corresponding to claimed R<sup>1</sup> and R<sup>2</sup> are different from each other and include isopropyl and ethyl groups (paragraphs 0110-121).

40. As to claim 23, Schottek teaches using the t-butylphenyl group (paragraphs 0110-121).

41. As to claim 27, Schottek teaches R<sup>50</sup> can each be hydrogen (paragraphs 0110-121).

42. As to claim 31, Schottek teaches propylene copolymers of 50-100 wt% propylene and a propylene-ethylene copolymer which has an ethylene content of 15-80 wt% which may have other alpha olefins (paragraphs 0211-0212).

43. As to claim 32, Schottek teaches using non-conjugated dienes in copolymerization of ethylene where the comonomer is up to 15 wt% (paragraphs 0203, 0211-212).

44. As to claim 33, Schottek teaches homopolymers of propylene (paragraph 0211).

45. As to claim 34, Schottek teaches polymerization of propylene and butane (paragraph 0212).

46. As to claim 35, Schottek teaches a polypropylene composition where the propylene copolymer is 50-100 wt% propylene and has ethylene content from 15-80

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wt% (paragraphs 0211-0212) and made according to the method of claim 1 (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0110-0121).

47. Claim 35 states properties of the polypropylene composition: isotactic pentads higher than 90% and a flowability index equal to or greater than 2. While Schottek does not elaborate on the property, Schottek teaches essentially the same polypropylene composition and process as that of the claimed, and one of ordinary skill in the art would have a reasonable basis to believe the polypropylene composition of Schottek exhibits essentially the same properties. Since the PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobvious difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

48. Even if properties of the polypropylene composition of the instant claims and the prior art examples are not the same, it would still have been obvious to one of ordinary skill in the art to make a polypropylene composition having the claimed properties because it appears that the references generically embrace the claimed polypropylene composition and one of ordinary skill in the art would have expected all embodiments of the reference to work. Applicants have not demonstrated that the differences, if any, between the claimed polypropylene composition and the prior art give rise to unexpected results.

49. As to claims 37-39, Schottek teaches that R<sup>50</sup> can be methyl or ethyl groups.

50. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schottek in view of Ewen and Spitz et al., (US 6,057,258). The discussion with respect

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to Schottek and Ewen as set forth in paragraphs 33-49 above is incorporated here by reference.

51. As to claim 28, Schottek teaches a multistage process involving the polymerization of olefins, including propylene and ethylene in a gas phase with organically supported catalytic systems of metallocenes and alumoxanes (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0121). Schottek teaches the metallocene has a chelating ligand with an indenyl derivative and a cyclopentadienyl derivative bridged by a  $\text{SiMe}_2$  group and the cyclopentadienyl derivative is a five membered ring that is fused with a C4-C24 heteroatom aryl ring system such as thiapentalene and has a  $\text{R}^{20}$  aryl group on the ring (paragraphs 0110-121). Ewen teaches metallocenes having cyclopentenyl ligands fused to substituted thiophenes where the metallocenes are used for producing polypropylene where the thiophene is substituted with both an aryl group and a methyl group (abstract, chart 1). Schottek and Ewen do not teach a pore diameter up to 10 micrometers and a porosity higher than 0.1 cc/g.

52. Spitz teaches organic supports for metallocene catalysts used in the polymerization of olefins with pore diameters of 75-300 Angstroms and a porosity from 1 to 4 cc/g (abstract; column 2, lines 15-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the polymerization process in Schottek with the pore sizes and porosity taught in Spitz because Spitz teaches polymerization of propylene and ethylene with metallocene/aluminoxane with a support that gives high activity and leads to polymers with high molecular mass and low

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polydispersity (column 1, lines 10-27, 38-47; column 2, lines 15-24; column 8, lines 14-25).

53. As to claim 29, Spitz teaches polymer supports with pore diameters of 75-300 Angstroms (column 2, lines 15-24).

54. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schottek and Spitz in view of Costa et al., U.S. Patent Application Publication 2001/0014727. The discussion with respect to Schottek and Ewen as set forth in paragraphs 33-53 above is incorporated here by reference.

55. As to claim 30, Schottek teaches a multistage process involving the polymerization of olefins, including propylene and ethylene in a gas phase with organically supported catalytic systems of metallocenes and alumoxanes (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0121). Schottek teaches the metallocene has a chelating ligand with an indenyl derivative and a cyclopentadienyl derivative bridged by a  $\text{SiMe}_2$  group and the cyclopentadienyl derivative is a five membered ring that is fused with a C4-C24 heteroatom aryl ring system such as thiapentalene and has a  $\text{R}^{20}$  aryl group on the ring (paragraphs 0110-121). Ewen teaches metallocenes having cyclopentenyl ligands fused to substituted thiophenes where the metallocenes are used for producing polypropylene where the thiophene is substituted with both an aryl group and a methyl group (abstract, chart 1). Schottek and Ewen do not teach pores with a diameter between 0.1 micrometers (1,000 Angstroms) and 2 micrometers (20,000 Angstroms).

56. Costa teaches a catalyst support for the polymerization of olefins with a pore radius between 1,000 and 75,000 Angstroms (abstract; paragraph 0012). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the polymerization process in Schottek with the pore sizes taught in Costa because Costa teaches catalyst support systems for the polymerization of alpha olefins with titanium catalysts where the supports are able to have variable sized particles which allows for obtaining polymers with low inorganic compound content (Costa: abstract; paragraphs 0011, 0015, 0085).

57. The range taught by Costa overlaps with the range disclosed in claim 30. It is well settled that where prior art describes the components of a claimed compound or compositions overlapping the claimed concentrations a prima facie case of obviousness is established. See MPEP 2144.05; *In re Harris*, 409, F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 3d 1379, 1382 (Fed. Cir 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

### ***Response to Arguments***

58. Applicant's arguments filed April 6, 2009 have been fully considered but they are not persuasive.

59. Applicant argues that the anticipation rejection in view of Schottek is overcome by the amendments because Schottek does not teach a metallocene where substituent R<sup>20</sup> of formula (II) are alkyl groups, as recited in the claimed formula (I) at substituent



R<sup>10</sup>. This is persuasive as to the anticipation rejection presented in the previous Office Action which is hereby withdrawn.

60. Applicant argues one of ordinary skill in the art would not have been motivated to modify the disclosure of Schottek to arrive at the claimed invention. This is not persuasive.

61. Formula (II) of Schottek does not teach that R<sup>20</sup> can be an alkyl group or that another alkyl group can be substituted in addition to R<sup>20</sup>. However, it is noted that formula (II) teaches that R<sup>50</sup> can be a C1-C18 alkyl group, such as methyl, ethyl, and butyl (paragraph 0114), and it would have been obvious that a substituent off a six membered ring of the indenyl ring system could also be off the Q ring system in addition to the R<sup>20</sup> group because formula (I) teaches alkyl substituents off both ring systems (paragraphs 0014-20). It would have been obvious to add such substituents to the Q ring system in order to control the isomerization of the metallocene (paragraphs 0133-135) to allow greater stereospecificity during polymerization.

62. Applicant's argument regarding the obviousness rejections using Schottek in view of Spitz and Schottek in view of Costa are substantively the same and will be treated together. Applicant argues that Spitz and Costa do not remedy the deficiencies of Schottek. This is not persuasive.

63. While Spitz and Costa does not disclose all the features of the present claimed invention, Spitz and Costa are used as teaching references, and therefore, it is not

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necessary for this secondary reference to contain all the features of the presently claimed invention, MPEP 2145; *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973); *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references teach certain concept, and in combination with the primary reference, disclose the presently claimed invention.

64. Applicant argues that the claimed compounds have unexpected results in that the produced polymers have surprisingly higher flowability properties, and Applicant directs attention to Tables 2 and 4 in Applicant's specification. This is not persuasive.

65. Example 4 uses the same metallocene compound as Example 3, metallocene compound A-1 (Table 2, paragraphs 0154, 0161). Therefore, Example 4 provides no evidence towards the unexpected results of the claimed metallocene compounds alone.

66. Furthermore, Examples 4 and 7 are the only examples that use a silica support instead of a porous organic support (paragraphs 0134-135, 0158-161). Therefore, Tables 2 and 4 provide no evidence towards the unexpected results of the claimed metallocene compounds, but rather imply the support is important.

### ***Conclusion***

67. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Friday, 9:00AM-5:00PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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